coopra
ADVANCED HEATING TECHNOLOGIES

EN

Status indications

15B, 15C, 37K, 37B, 37C, 40C, 80C

Gas boiler with 3-way valve for storage cylinder	E15B
Gas boiler for Heating	E15C
Combi-boiler	E37K
Gas boiler with 3-way valve for storage cylinder	E37B
Gas boiler for Heating	E37C
Gas boiler for Heating	E40C
Gas boiler for Heating TWIN	E80C

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Flashing	E	Internal regulation fault
Alternating	E / t1	Flow sensor problem
Alternating	E / t2	Return sensor problem
Alternating	E / t3	Fluegas sensor problem
Continuous	E	No Slave recognised
Alternating	SLA / 01	No Master recognised
Flashing	F	Four failed consecutive start attempts
Flashing	H	Flow / return sensor limiter > 105°C
Continuous	J	Anti-cycling titimer active
Continuous	o (small o)	Frost protection 8°C
Continuous	o (small o+dot)	Frost protection 3°C
Flashing	O	Mechanical limiter option
Continuous	P	High or low water pressure
Continuous	P	De-aeration programme running
Continuous	t	Outdoor summer switch active

STATUS INDICATIONS

High voltage! 230 Volt !!!!
The wiring of pump, three-way valve, fan and wiring of the gasvalve may be under high voltage !!!!

Chimney sweeper function

Start the chimney sweeper function by pressing the + and - buttons of the display simultaneously for at least 10 seconds.
The status shows a flashing C and the two right segments show the ionisation current in microamperes DC.
The chimney sweeper function overruns the heating regulation

temporarily display for service purposes → **C flashing** → chimney sweeper function → switch high/low load with the + button or the – button → chimney sweeper function removes automatically after 10 minutes or by pressing shortly both the "+" and "-" buttons simultaneously

The two right segments show the actual ionisation current
show the actual ionisation current in micro Amps DC

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the boiler tests once per hour the difference between flow and return temperatures. → waiting for heat demand → **0 continuous** → Stand-by → waitung for heat demand

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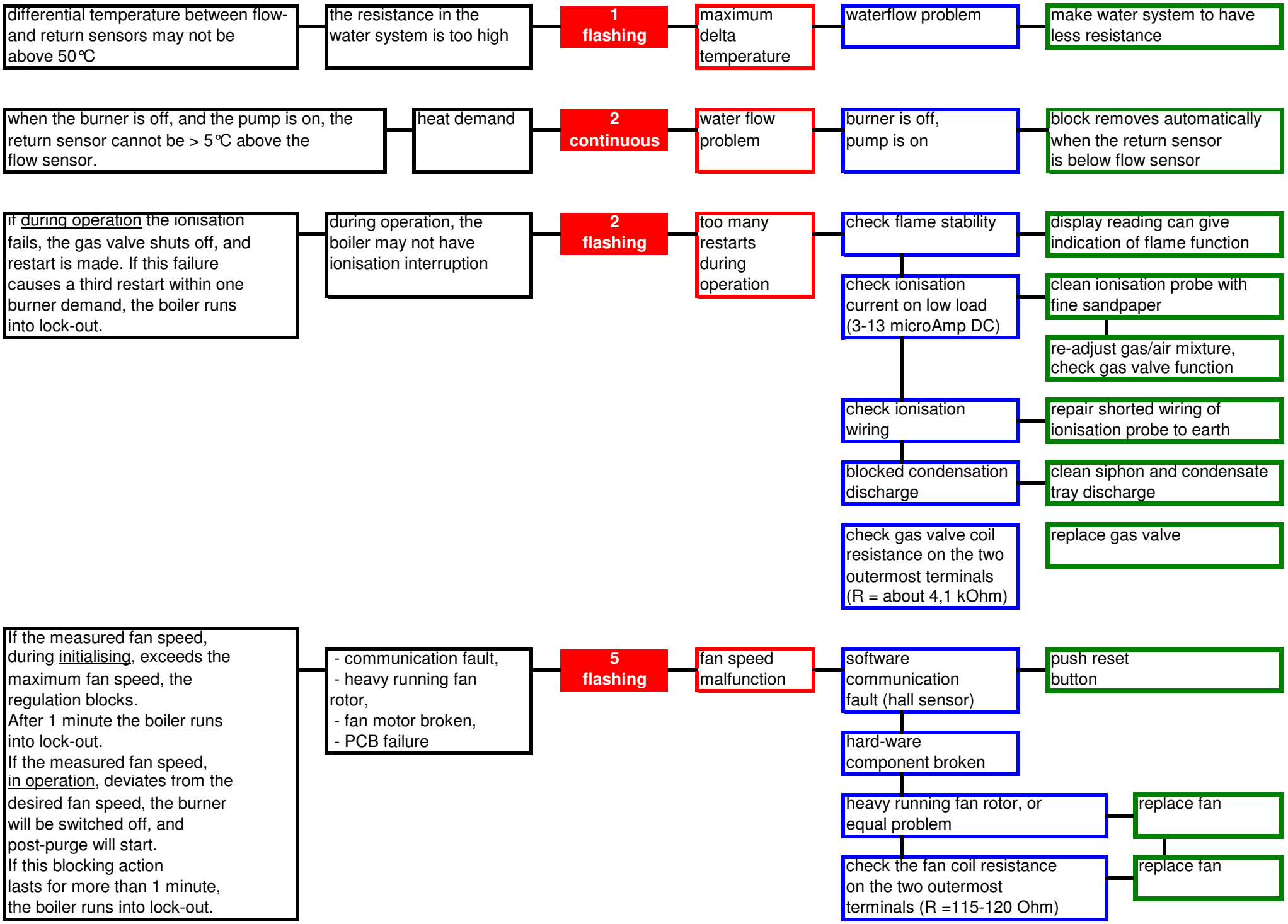
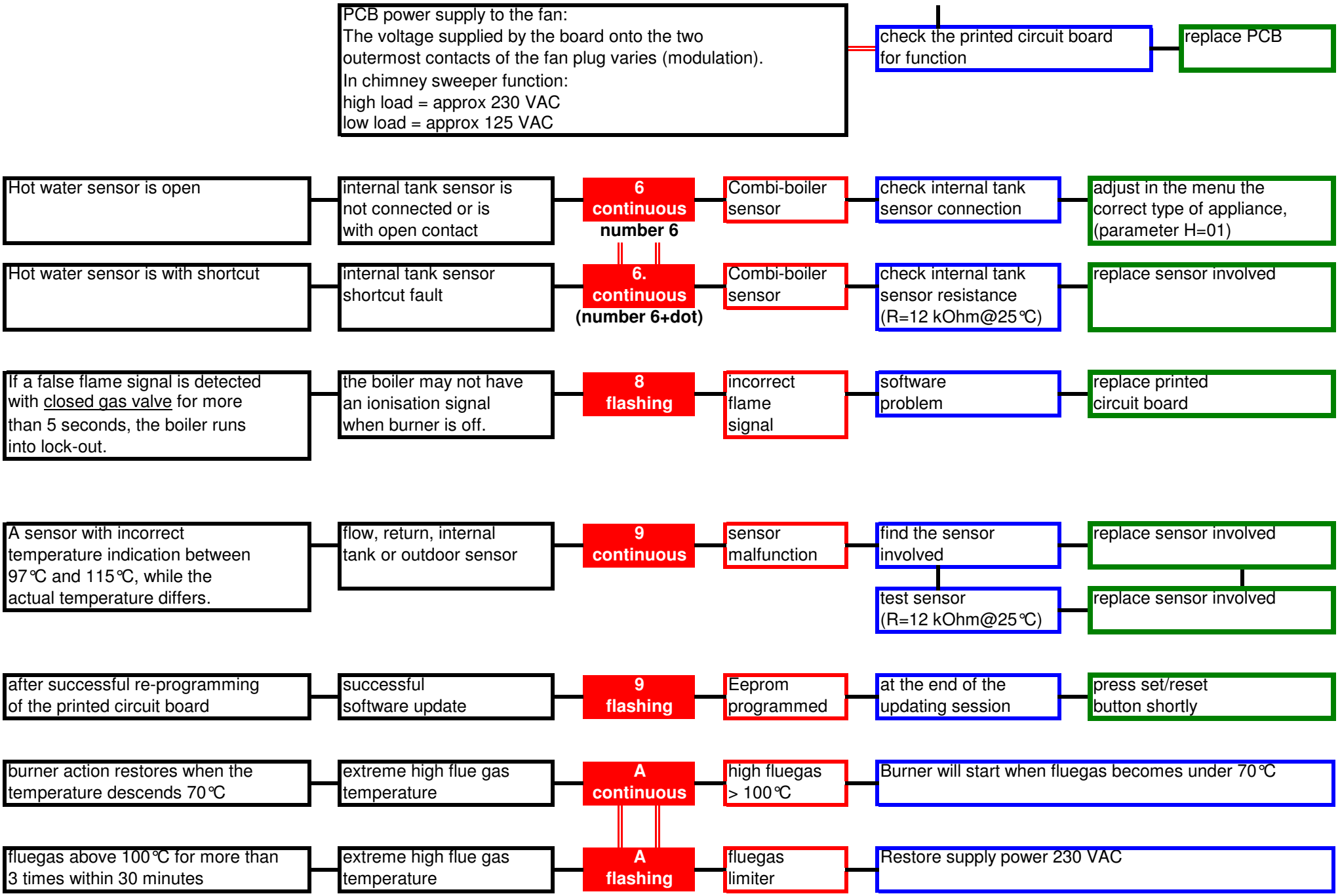
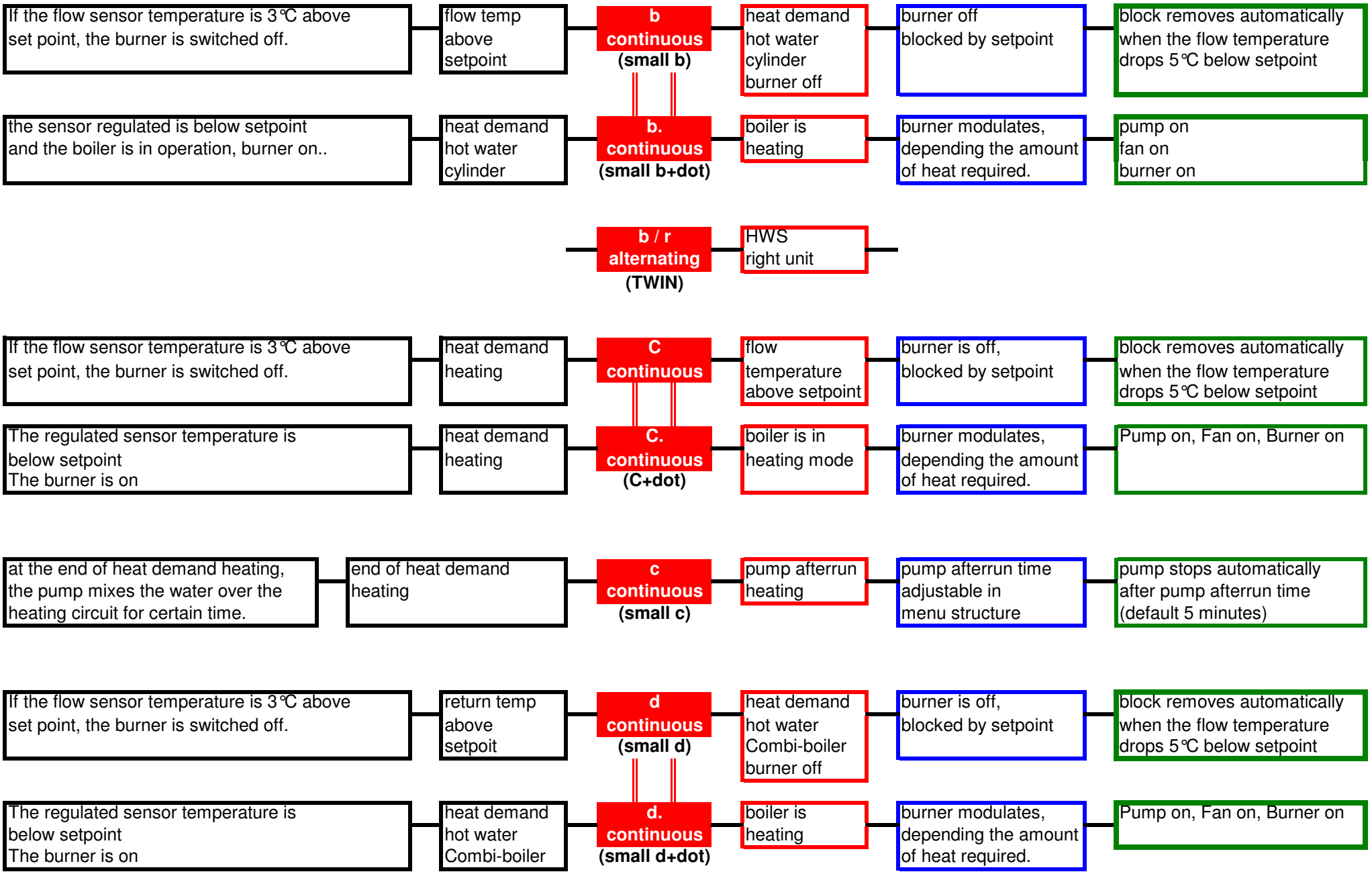
Each burner start (after the pump test program), the boiler is doing a temperature test.
The flow sensor must rise by 3°C more than the return sensor, within the first 20 seconds.
if the difference is not made, the boiler will make a re-start.
After three failed re-starts, within one heat demand, boiler runs into lock-out

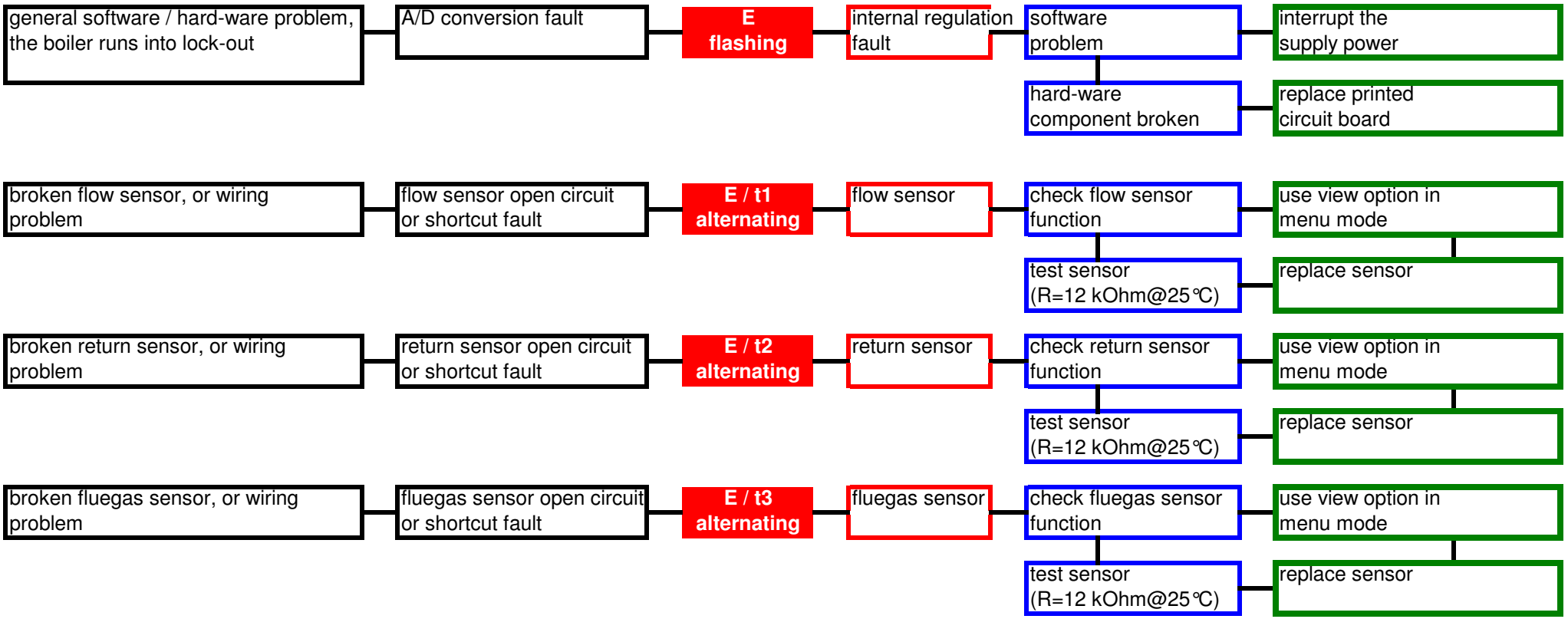
→ mostly, this lock-out is related to a water flow problem → **1 flashing** → boiler does not pass temperature test

- check both flow and return sensors for function → use view option in menu mode
- test sensor (R=12 kOhm@25°C) → replace sensor
- obstruction in water water circuit (flow or return) → open (thermostatic) valves or zone systems → install a differential bypass valve between flow and return

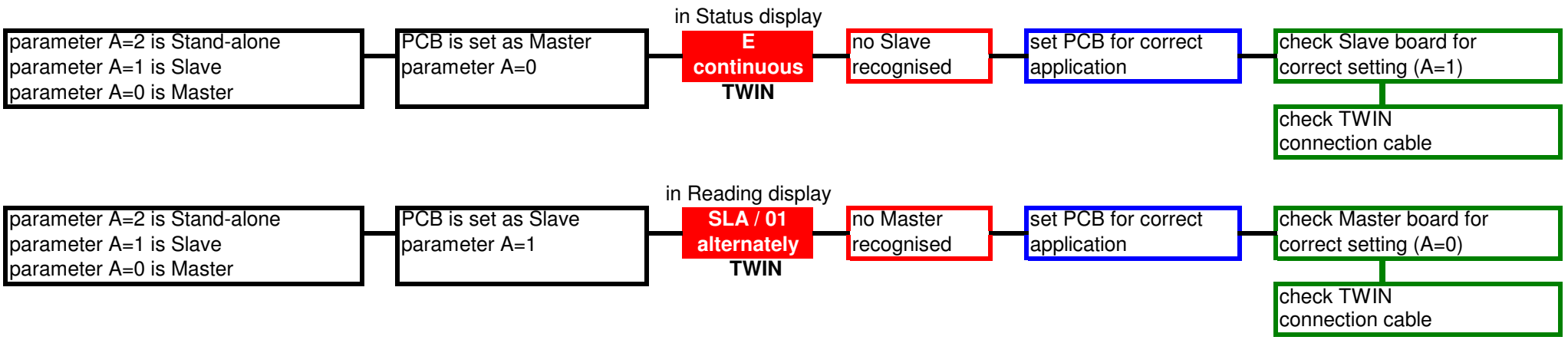

differential temperature between flow- and return sensors may not be above 50°C
the resistance in the water system is too high
1 flashing
maximum delta temperature
waterflow problem
make water system to have less resistance
when the burner is off, and the pump is on, the return sensor cannot be > 5°C above the flow sensor.
heat demand
2 continuous
water flow problem
burner is off, pump is on
block removes automatically when the return sensor is below flow sensor
If during operation the ionisation fails, the gas valve shuts off, and restart is made. If this failure causes a third restart within one burner demand, the boiler runs into lock-out.
during operation, the boiler may not have ionisation interruption
2 flashing
too many restarts during operation
check flame stability
display reading can give indication of flame function
check ionisation current on low load (3-13 microAmp DC)
clean ionisation probe with fine sandpaper
re-adjust gas/air mixture, check gas valve function
check ionisation wiring
repair shorted wiring of ionisation probe to earth
blocked condensation discharge
clean siphon and condensate tray discharge
check gas valve coil resistance on the two outermost terminals (R = about 4,1 kOhm)
replace gas valve
If the measured fan speed, during initialising, exceeds the maximum fan speed, the regulation blocks.
After 1 minute the boiler runs into lock-out.
If the measured fan speed, in operation, deviates from the desired fan speed, the burner will be switched off, and post-purge will start.
If this blocking action lasts for more than 1 minute, the boiler runs into lock-out.
- communication fault,
- heavy running fan rotor,
- fan motor broken,
- PCB failure
5 flashing
fan speed malfunction
software communication fault (hall sensor)
push reset button
hard-ware component broken
heavy running fan rotor, or equal problem
replace fan
check the fan coil resistance on the two outermost terminals (R =115-120 Ohm)
replace fan

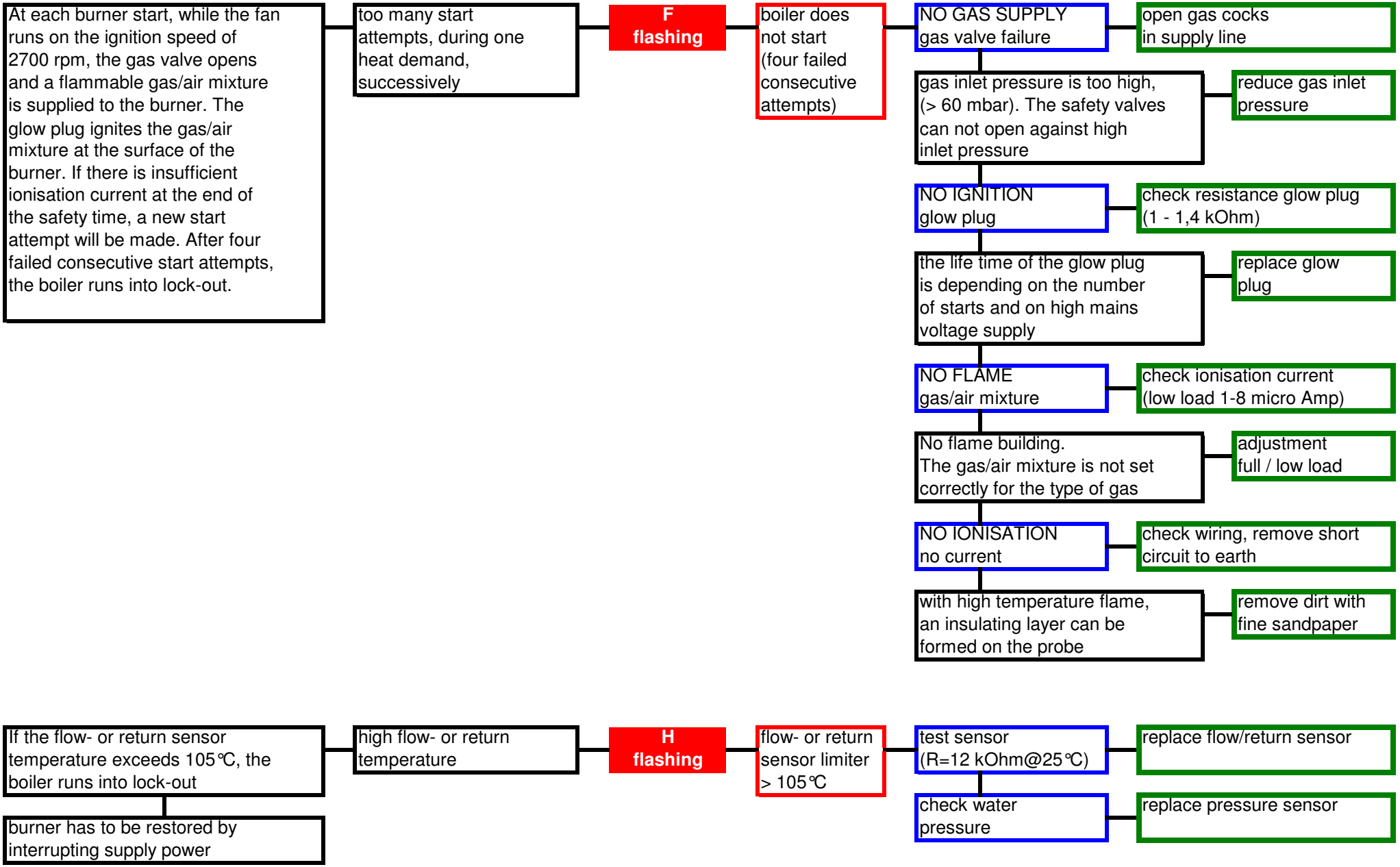

PCB power supply to the fan:
The voltage supplied by the board onto the two outermost contacts of the fan plug varies (modulation).
In chimney sweeper function:
high load = approx 230 VAC
low load = approx 125 VAC
check the printed circuit board for function
replace PCB
Hot water sensor is open
internal tank sensor is not connected or is with open contact
6 continuous
number 6
Combi-boiler sensor
check internal tank sensor connection
adjust in the menu the correct type of appliance, (parameter H=01)
Hot water sensor is with shortcut
internal tank sensor shortcut fault
6. continuous
(number 6+dot)
Combi-boiler sensor
check internal tank sensor resistance (R=12 kOhm@25°C)
replace sensor involved
If a false flame signal is detected with closed gas valve for more than 5 seconds, the boiler runs into lock-out.
the boiler may not have an ionisation signal when burner is off.
8 flashing
incorrect flame signal
software problem
replace printed circuit board
A sensor with incorrect temperature indication between 97°C and 115°C, while the actual temperature differs.
flow, return, internal tank or outdoor sensor
9 continuous
sensor malfunction
find the sensor involved
replace sensor involved
test sensor (R=12 kOhm@25°C)
replace sensor involved
after successful re-programming of the printed circuit board
successful software update
9 flashing
Eeprom programmed
at the end of the updating session
press set/reset button shortly
burner action restores when the temperature descends 70°C
extreme high flue gas temperature
A continuous
high fluegas > 100°C
Burner will start when fluegas becomes under 70°C
fluegas above 100°C for more than 3 times within 30 minutes
extreme high flue gas temperature
A flashing
fluegas limiter
Restore supply power 230 VAC

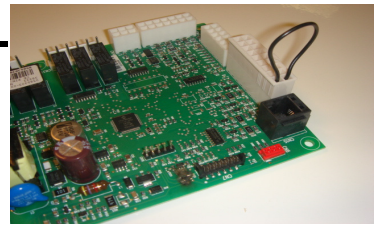

If the flow sensor temperature is 3°C above set point, the burner is switched off.
flow temp above setpoint
b continuous (small b)
heat demand hot water cylinder burner off
burner off blocked by setpoint
block removes automatically when the flow temperature drops 5°C below setpoint
the sensor regulated is below setpoint and the boiler is in operation, burner on..
heat demand hot water cylinder
b. continuous (small b+dot)
boiler is heating
burner modulates, depending the amount of heat required.
pump on fan on burner on
b / r alternating (TWIN)
HWS right unit
If the flow sensor temperature is 3°C above set point, the burner is switched off.
heat demand heating
C continuous
flow temperature above setpoint
burner is off, blocked by setpoint
block removes automatically when the flow temperature drops 5°C below setpoint
The regulated sensor temperature is below setpoint The burner is on
heat demand heating
C. continuous (C+dot)
boiler is in heating mode
burner modulates, depending the amount of heat required.
Pump on, Fan on, Burner on
at the end of heat demand heating, the pump mixes the water over the heating circuit for certain time.
end of heat demand heating
c continuous (small c)
pump afterrun heating
pump afterrun time adjustable in menu structure
pump stops automatically after pump afterrun time (default 5 minutes)
If the flow sensor temperature is 3°C above set point, the burner is switched off.
return temp above setpoit
d continuous (small d)
heat demand hot water Combi-boiler burner off
burner is off, blocked by setpoint
block removes automatically when the flow temperature drops 5°C below setpoint
The regulated sensor temperature is below setpoint The burner is on
heat demand hot water Combi-boiler
d. continuous (small d+dot)
boiler is heating
burner modulates, depending the amount of heat required.
Pump on, Fan on, Burner on

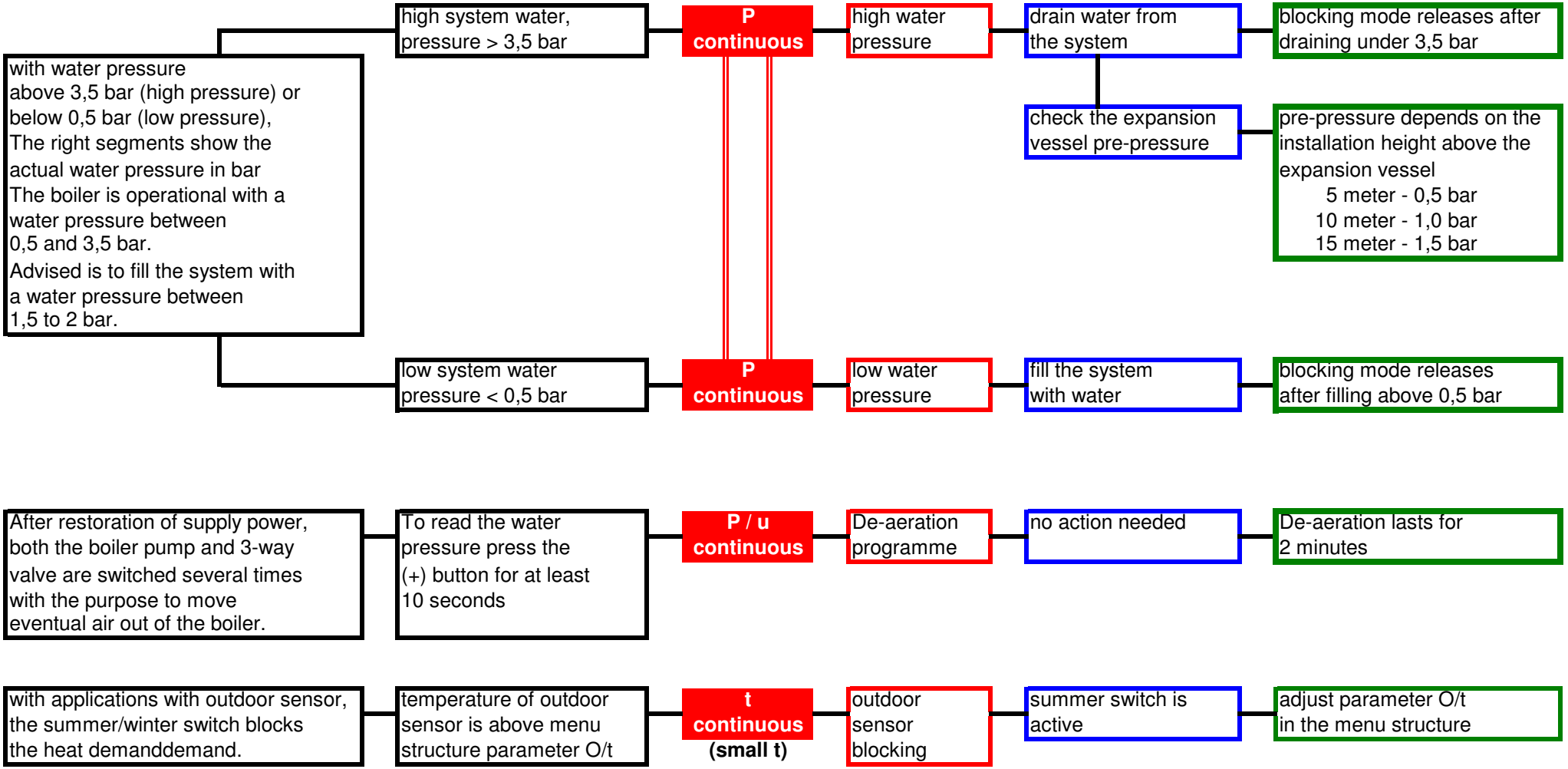

general software / hard-ware problem, the boiler runs into lock-out
A/D conversion fault
E flashing
internal regulation fault
software problem
interrupt the supply power
hard-ware component broken
replace printed circuit board
broken flow sensor, or wiring problem
flow sensor open circuit or shortcut fault
E / t1 alternating
flow sensor
check flow sensor function
use view option in menu mode
test sensor (R=12 kOhm@25°C)
replace sensor
broken return sensor, or wiring problem
return sensor open circuit or shortcut fault
E / t2 alternating
return sensor
check return sensor function
use view option in menu mode
test sensor (R=12 kOhm@25°C)
replace sensor
broken fluegas sensor, or wiring problem
fluegas sensor open circuit or shortcut fault
E / t3 alternating
fluegas sensor
check fluegas sensor function
use view option in menu mode
test sensor (R=12 kOhm@25°C)
replace sensor

For Stand-alone, set in the menu structure parameter A=2




At each burner start, while the fan runs on the ignition speed of 2700 rpm, the gas valve opens and a flammable gas/air mixture is supplied to the burner. The glow plug ignites the gas/air mixture at the surface of the burner. If there is insufficient ionisation current at the end of the safety time, a new start attempt will be made. After four failed consecutive start attempts, the boiler runs into lock-out.
too many start attempts, during one heat demand, successively
F flashing
boiler does not start (four failed consecutive attempts)
NO GAS SUPPLY gas valve failure
open gas cocks in supply line
gas inlet pressure is too high, (> 60 mbar). The safety valves can not open against high inlet pressure
reduce gas inlet pressure
NO IGNITION glow plug
check resistance glow plug (1 - 1,4 kOhm)
the life time of the glow plug is depending on the number of starts and on high mains voltage supply
replace glow plug
NO FLAME gas/air mixture
check ionisation current (low load 1-8 micro Amp)
No flame building. The gas/air mixture is not set correctly for the type of gas
adjustment full / low load
NO IONISATION no current
check wiring, remove short circuit to earth
with high temperature flame, an insulating layer can be formed on the probe
remove dirt with fine sandpaper
If the flow- or return sensor temperature exceeds 105°C, the boiler runs into lock-out
burner has to be restored by interrupting supply power
high flow- or return temperature
H flashing
flow- or return sensor limiter > 105°C
test sensor (R=12 kOhm@25°C)
replace flow/return sensor
check water pressure
replace pressure sensor

If the flow sensor temperature is 5°C below setpoint, the 3 minutes anti-cycling time runs	heat demand heating	**J continuous**	anti-cycling timer active	burner is off, blocked by anti-cycling timer	block removes automatically after 3 minutes
If the flow sensor temperature becomes below 8°C, the regulation starts the pump frost protection is finished, when the temperature of return sensor is above 15°C.	frost protection 8°C	**o continuous (small o)**	frost protection	check heat demand (room thermostat)	repair heat demand on the green connector (contacts 1 and 2)
If the flow sensor temperature becomes below 3°C, the regulation starts the burner frost protection is finished, when the temperature of return sensor is above 15°C.	frost protection 3°C	**o. continuous (small o+dot)**	frost protection	check heat demand (room thermostat)	repair heat demand on the green connector (contacts 1 and 2)
mechanical limiter is bridged on connector of PCB. The contacts are open	mechanical limiter is not on Coopra boilers, the contacts of PCB bridged	**O flashing**	mechanical limiter option	check wiring check bridge	


with water pressure above 3,5 bar (high pressure) or below 0,5 bar (low pressure), The right segments show the actual water pressure in bar The boiler is operational with a water pressure between 0,5 and 3,5 bar. Advised is to fill the system with a water pressure between 1,5 to 2 bar.
high system water, pressure > 3,5 bar
P continuous
high water pressure
drain water from the system
blocking mode releases after draining under 3,5 bar
check the expansion vessel pre-pressure
pre-pressure depends on the installation height above the expansion vessel
5 meter - 0,5 bar
10 meter - 1,0 bar
15 meter - 1,5 bar
low system water pressure < 0,5 bar
P continuous
low water pressure
fill the system with water
blocking mode releases after filling above 0,5 bar
After restoration of supply power, both the boiler pump and 3-way valve are switched several times with the purpose to move eventual air out of the boiler.
To read the water pressure press the (+) button for at least 10 seconds
P / u continuous
De-aeration programme
no action needed
De-aeration lasts for 2 minutes
with applications with outdoor sensor, the summer/winter switch blocks the heat demanddemand.
temperature of outdoor sensor is above menu structure parameter O/t
t continuous (small t)
outdoor sensor blocking
summer switch is active
adjust parameter O/t in the menu structure

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